

the medical man has better material for the study of evolution than any biologist has had or can have, for the reason, says Dr. Reid, that the animal about which we know infinitely more than we do about any other is man himself. And further than this, he maintains that a knowledge of the relation of man to disease has already furnished us with solutions to such problems as that of the inheritance of use and disuse, and others which he names. Now if the reader is familiar with Prof. Ray Lankester's Romanes Lecture, he will immediately see that great caution must be exercised.

Prof. Lankester in this lecture showed that, though man was a part of nature, he had separated himself from nature, and had set up for himself a *regnum hominis*, where, to use Huxley's terms, the cosmic process was replaced by the horticultural. Man had—if we may use a picturesque expression which has no meaning—disobeyed nature's laws, and had become in Prof. Lankester's words "nature's rebel."

Moreover, it was in the very matter of disease, on which Dr. Reid bases so much, that man had become more different from the rest of nature than in any other respect.

Disease has no existence in nature apart from man; the parasite either kills his host or an equilibrium is established between the two and both continue to live together; whereas in man a state of affairs has been evolved which is entirely peculiar to him, namely, disease.

Now I maintain that these considerations should prevent us from being too willing, or even from being willing at all, to argue from the data that medical men possess concerning the human species, and particularly from the data concerning man's relation to disease, to the rest of nature.

I am sometimes asked, "Is the knowledge of heredity which you acquire from your experiments with mice likely to be applicable to man?" In my opinion the question which the pure biologist should seriously consider before he accepts the truth of Dr. Reid's contention is, "Is the knowledge of heredity acquired by observation on man likely to be applicable to mice? Is that knowledge likely to help him towards a closer acquaintance with the fundamental nature of living things?" My answer is, that it may do to a certain degree, but not so surely as will the kind of knowledge acquired by the pure biologist—a knowledge of nature outside the *regnum hominis*.

Biologists are still very anthropomorphic, and medical men still more so. To the pure biologist man is not a more interesting animal than any other; and, in fact, it might be urged with some justice that as "nature's rebel" he is less so. I am well aware that this view will find no favour with Dr. Reid. On the other hand, Dr. Reid's estimate of the value of the breeding-pen, as an instrument for acquiring a knowledge of heredity, is likely to find as little favour with the experimental breeder. Yet who can say that the one has more of truth in his opinion than the other?

Naturally each one thinks that the point of view from which, and the material with which, he works at a problem is the best, but I am willing to concede to Dr. Reid the point that, considered as material for dealing with heredity, men are nearly as good as mice, if he will allow that mice are nearly as good as men.

A. D. D.

A Suggested Change in Nomenclature.

In the *Geological Magazine* for October, 1904, I gave the name Barypoda to a new order of Ungulates, including under it Arsinotherium and its allies. It has just been pointed out to me by Mr. W. K. Gregory, of the American Museum of Natural History, that this name was previously used by Haeckel (*"Generelle Morphologie,"* ii., p. clvii.) for certain groups of extinct marsupials. It is therefore advisable to suggest another name for the new division of the Ungulates, and I propose that Embrithopoda be employed.

In the case of a generic name, it is comparatively easy to determine with reasonable certainty whether it has been previously used or not, but with the names of higher subdivisions this is very difficult, especially when, as in the present case, the term has never passed into current use.

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NOTES ON STONEHENGE.¹

X.—SACRED FIRES.

THE magnificent collection of facts bearing on this subject which has been brought together by Mr. Frazer in *"The Golden Bough"* renders it unnecessary for me to deal with the details of this part of my subject at any great length.

We have these records of fires:—

(1) In February, May, August and November of the original May year.

(2) In June and December on the longest and shortest days of the astronomical year (the solstices), concerning which there could not be, and has not been, any such change of date as has occurred in relation to the May year festivals.

(3) A fire at Easter, in all probability added not long before or at the introduction of Christianity. I find no traces of a fire festival at the corresponding equinox in September.

We learn from Cormac that the fires were generally double and that cattle were driven between them.

Concerning this question of fire, both Mr. Frazer and the Rev. S. Baring-Gould² suggest that we are justified in considering the Christian treatment of the sacred fire as a survival of pagan times. Mr. Baring-Gould writes as follows:—"When Christianity became dominant, it was necessary to dissociate the ideas of the people from the central fire as mixed up with the old gods; at the same time the central fire was an absolute need. Accordingly the Church was converted into the sacred depository of the perpetual fire."

He further points out that there still remain in some of our churches (in Cornwall, York, and Dorset) the contrivances—now called cresset-stones—used. They are blocks of stone with cups hollowed out. Some are placed in lamp-niches furnished with flues. On these he remarks (p. 122):—

"Now although these lamps and cressets had their religious signification, yet this religious signification was an afterthought. The origin of them lay in the necessity of there being in every place a central light, from which light could at any time be borrowed; and the reason why this central light was put in the church was to dissociate it from the heathen ideas attached formerly to it. As it was, the good people of the Middle Ages were not quite satisfied with the central church fire, and they had recourse in times of emergency to others—and as the Church deemed them—unholy fires. When a plague and murrain appeared among cattle, then they lighted need-fires from two pieces of dry wood, and drove the cattle between the flames, believing that this new flame was wholesome to the purging away of the disease. For kindling the need-fires the employment of flint and steel was forbidden. The fire was only efficacious when extracted in prehistoric fashion, out of wood. The lighting of these need-fires was forbidden by the Church in the eighth century. What shows that this need-fire was distinctly heathen is that in the Church new fire was obtained at Easter annually by striking flint and steel together. It was supposed that the old fire in a

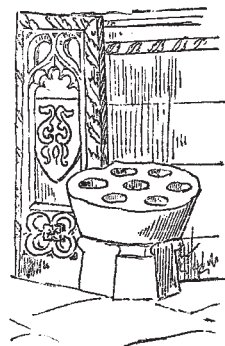


FIG. 24.—Cresset-stone, Lewannick. From Baring-Gould's *"Strange Survivals."*

¹ Continued from p. 155.

² *"Strange Survivals,"* p. 120 et seq.

twelvemonth had got exhausted, or perhaps that all light expired with Christ, and that new fire must be obtained. Accordingly the priest solemnly struck new fire out of flint and steel. But fire from flint and steel was a novelty; and the people, Pagan at heart, had no confidence in it, and in time of adversity went back to the need-fire kindled in the time-honoured way from wood by friction, before this new-fangled way of drawing it out of stone and iron was invented."

The same authority informs us that before Christianity was introduced into Ireland by St. Patrick

there was a temple at Tara "where fire burned ever, and was on no account suffered to go out."

Mr. Frazer,¹ quoting Cerbied, shows that in the ancient religion of Armenia the new fire was kindled at the February festival of the May year, in honour of the fire god Mihr. "A bonfire was made in a public place and lamps kindled at it were kept burning throughout the year in each of the fire-god's temples." This festival now takes place at Candlemas, February 2.

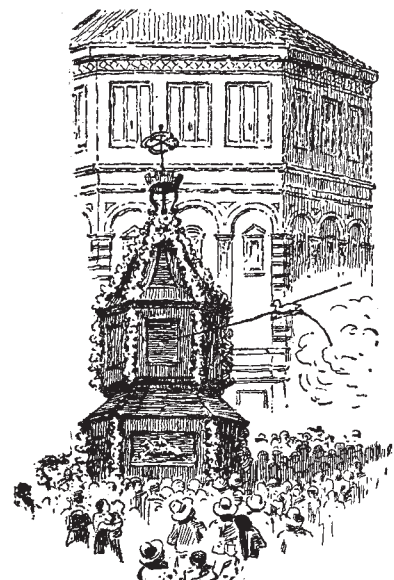


FIG. 25.—The Carro, Florence. From Baring-Gould's "Strange Survivals"

We must assume, then, that the pagan fires were produced by the friction of dry wood, and possibly in connection with an ever-burning fire. In either case the priests officiating at the various circles must have had a place handy where the wood was kept dry or the fire kept burning, and on this ground alone we may again inquire whether such structures as Maeshowe at the Stenness circle, the Fougou at that of the Merry Maidens, and indeed chambered barrows and cairns generally, were not used for these purposes amongst others; whether indeed they were not primarily built for the living and not for the dead, and whether this will explain the finding of traces of fires and of hollowed stones in them, as well as some points in their structure. Mr. MacRitchie² has brought together several of these points, among them fireplaces and flues for carrying away smoke.

At both solstices it would appear that a special fire-rite was practised. This consisted of tying straw on a wheel and rolling it when lighted down a hill. There is much evidence for the wheel at the summer but less at the winter solstice; still, we learn from the old Runic *fasti* that a wheel was used to denote the festival of Christmas. With regard to the summer solstice I quote the following from Hazlitt (under John, St.):—

"Durandus, speaking of the rites of the Feast of St. John Baptist, informs us of this curious circumstance, that in some places they roll a wheel about to signify that the sun, then occupying the highest place in the Zodiac, is beginning to descend. 'Rotam

quoque hoc die in quibusdam locis volvunt, ad significandum quod Sol altissimum tunc locum in Coelo occupet, et descendere incipiat in Zodiaco.' Harl. MSS. 2345 (on vellum), Art. 100, is an Account of the rites of St. John Baptist's Eve, in which the wheel is also mentioned. In the amplified account of these ceremonies given by Naageorgus, we read that this wheel was taken up to the top of a mountain and rolled down thence; and that, as it had previously been covered with straw twisted about it and set on fire, it appeared at a distance as if the sun had been falling from the sky. And he further observes, that the people imagine that all their ill-luck rolls away from them together with this wheel. At Norwich, says a writer in *Current Notes* for March, 1854, the rites of St. John the Baptist were anciently observed, 'when it was the custom to turn or roll a wheel about, in signification of the sun's annual course, or the sun, then occupying the highest place in the Zodiac, was about descending.'"

At Magdalen College, Oxford, the May and June years are clearly differentiated. There is a vocal service at sunrise on May morning, followed by boys blowing horns. At the summer solstice there is a sermon preached during the day in the quadrangle.

One of the most picturesque survivals of this ancient custom takes place at Florence each year at Easter. This is fully described by Baring-Gould. The moment the sacred fire is produced at the high altar a dove (in plaster) carries it along a rope about 200 yards long to a car in the square outside the west door of the cathedral and sets fire to a fuse, thus causing the explosion of fireworks.

The car with its explosives is the survival of the ancient bonfire.

It would appear that the lighting of these fires on a large scale lingered longest in Ireland and Brittany.

A correspondent of the *Gentleman's Magazine* (February, 1795) thus describes the Irish Beltane fires in 1782, "the most singular sight in Ireland":—

"Exactly at midnight, the fires began to appear, and taking the advantage of going up to the leads of the house, which had a widely extended view, I saw on a radius of thirty miles, all around, the fires burning on every eminence which the country afforded. I had a farther satisfaction in learning, from undoubted authority, that the people danced round the fires, and at the close went through these fires, and made their sons and daughters, together with their cattle, pass through the fire; and the whole was conducted with religious solemnity."

It will have been observed with reference to these fire festivals that although there were undoubtedly four, in May, August, November, and February, those in May and November were more important than the others. This no doubt arose from the fact that at different times the May and November celebrations were *New Year* festivals. With regard to the New Year in November in Celtic and later times, Rhys writes as follows ("Hibbert Lectures," p. 514):—

"The Celts were in the habit formerly of counting winters, and of giving precedence in their reckoning to night and winter over day and summer (p. 360); I should argue that the last day of the year in the Irish story of Diarmait's death meant the eve of November or All-halloween, the night before the Irish *Samhain*, and known in Welsh as *Nos Galan-gaeaf*, or the Night of the Winter Calends. But there is no occasion to rest on this alone, as we have the evidence of Cormac's Glossary that the month before the beginning of winter was the last month; so that the first day of the first month of winter was also the first day of the year."

That the November bonfire was recognised as

¹ "Golden Bough," iii. 248.

² "The Testimony of Tradition."

heralding the dominion of the gods and spirits of darkness; that the old ideas surrounding Horus and Set in Egypt were not forgotten; is evidenced by the fact that when the fire was extinct the whole company round it would suddenly take to their heels, shouting at the top of their voices:—

Yr hwch du gwta
Agipio 'r ola'!

The cropped black sow
Seize the hindmost!

A piecing together of the folklore and traditions of different districts suggests that sacrifices were made in connection with the fire festivals, in fact that the fire at one of the critical times of the May year was a sacrificial one.

I will quote two cases given by Gomme¹ for May Day and All Souls' Day respectively:—

"At the village of Holne, situated on one of the spurs of Dartmoor, is a field of about two acres, the property of the parish, and called the Ploy Field. In the centre of this field stands a granite pillar (Menhir) six or seven feet high. On May-morning, before daybreak, the young men of the village used to assemble there, and then proceed to the moor, where they selected a ram lamb, and after running it down, brought it in triumph to the Ploy Field, fastened it to the pillar, cut its throat and then roasted it whole, skin, wool, &c. At midday a struggle took place, at the risk of cut hands, for a slice, it being supposed to confer luck for the ensuing year on the fortunate devourer. As an act of gallantry the young men sometimes fought their way through the crowd to get a slice for the chosen amongst the young women, all of whom, in their best dresses, attended the Ram Feast, as it was called. Dancing, wrestling, and other games, assisted by copious libations of cider during the afternoon, prolonged the festivity till midnight."

In the parish of King's Teignton, Devonshire, "a lamb is drawn about the parish on Whitsun Monday in a cart covered with garlands of lilac, laburnum, and other flowers, when persons are requested to give something towards the animal and attendant expenses; on Tuesday it is then killed and roasted whole in the middle of the village. The lamb is then sold in slices to the poor at a cheap rate."

The popular legend concerning the origin of this custom introduces two important elements—a reference to "heathen days" and the title of "sacrifice" ascribed to the killing of the lamb (p. 31).

"At St. Peter's, Athlone, every family of a village on St. Martin's Day kills an animal of some kind or other; those who are rich kill a cow or sheep, others a goose or turkey, while those who are poor kill a hen or cock; with the blood of the animal they sprinkle the threshold and also the four corners of the house, and 'this performance is done to exclude every kind of evil spirit from the dwelling where the sacrifice is made till the return of the same day the following year'" (p. 163).

Other traditions indicate that human sacrifices were in question and that lots were drawn, or some other method of the choice of a victim was adopted. I quote from Hazlitt (i., 44) the following report of the Minister of Callender in 1794:—

"The people of this district have two customs, which are fast wearing out, not only here, but all over the Highlands, and therefore ought to be taken notice of, while they remain. Upon the first day of May, which is called Beltan, or Bâl-tein-day, all the boys in a township or hamlet meet in the moors. They cut a table in the green sod, of a round figure, by casting a trench in the ground of such a circumference as to hold the whole company. They kindle

a fire, and dress a repast of eggs and milk in the consistence of a custard. They knead a cake of oat-meal, which is toasted at the embers against a stone. After the custard is eaten up, they divide the cake into so many portions, as similar as possible to one another in size and shape, as there are persons in the company. They daub one of these portions all over with charcoal, until it be perfectly black. They put all the bits of the cake into a bonnet. Everyone, blindfold, draws out a portion. He who holds the bonnet is entitled to the last bit. Whoever draws the black bit is the devoted person, who is to be sacrificed to Baal, whose favour they mean to implore, in rendering the year productive of the sustenance of man and beast. There is little doubt of these inhuman sacrifices having been once offered in this country as well as in the East, although they now pass from the act of sacrificing, and only compel the devoted person to leap three times through the flames; with which the ceremonies of the festival are closed."

I may conclude this article by referring to similar practices in Brittany, where Baring-Gould has so successfully studied them.¹

The present remnants of the old cult in the different parishes are now called "Pardons"; they are still numerous. I give those for the May and August festivals (p. 83):—

MAY.

Ascension Day	Bodilis, Penhars, Spezet (at the Well of S. Gouzenou), Landevennec, Plougouneec.
Sunday after Ascension Day	Trégoat, St. Divy.
Whit Sunday	Kernilis. Plouider; Edern; Coray; Spezet (Chapel of Cran).
" Monday	Quimperlé (Pardon des Oiseaux); Pont l'Abbé (Pardon des Enfants); Ergué-Armel, La Forêt, Landudal, Ploneis, Landeleau, Carantec.
" Thursday	Gouezec (Les Fontaines).

AUGUST.

First Sunday in August ...	Pleyben (horse races); Plébannalec; Pouldreuzic; Plougoumelin; Huelgoët; S. Nicodème in Plumeliau (M.), Cattle blessed; second day horse fair, and girls sell their tresses to hair merchants.
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Judging by the "pardons," the solstitial celebrations are not so numerous as those connected with the May year. The bonfire is built up by the head of a family in which the right is hereditary. The fire has to be lighted only by a pure virgin, and the sick and feeble are carried to the spot, as the bonfire flames are held to be gifted with miraculous healing powers. When the flames are abated, stones are placed for the souls of the dead to sit there through the remainder of the night and enjoy the heat. "Every member of the community carries away a handful of ashes as a sovereign cure for sundry maladies. The whole proceeding is instinct with paganism" (p. 75).

With regard to the accompanying sacrifices, we read:—"In ancient times sacrifices were made of cocks and oxen at certain shrines—now they are still presented, but it is to the chapels of saints. S. Herbot receives cows' tails, and these may be seen heaped upon his altar in Loqueffret. At Coadret as many as seven hundred are offered on the day of the 'pardon.' At S. Nicolas-des-Eaux, it is S. Nicodemus who in his chapel receives gifts of whole oxen, and much the same takes place at Carnac."

NORMAN LOCKYER.

¹ "Ethnology in Folklore," pp. 32 and 163.

¹ "A Book of Brittany."